

WE CLAIM:

1. A golf ball comprising:

5 a core comprising at least one high cis content polybutadiene; zinc oxide; zinc stearate; zinc dyacrylate; an organic peroxide; and at least one filler material; and,

a cover layer comprising a single ionomer resin having an acid content that is at least 95% neutralized, a flex modulus of at least 30kpsi and a Shore D hardness no greater than 55;

10 wherein the golf ball has a PGA compression of about 85, a weight of between about 45.2 to 46.0 g; a coefficient of restitution greater than about .700, and a Shore D hardness no greater than about 55 and exhibits a spin rate of at least 7500 rpm when struck with an iorn.

15 2. A golf ball according to claim 1, wherein the ionomer resin comprises:

a) an alpha olefin;

b) an ethylenically unsaturated carboxylic acid;

20 c) a metal cation in an amount sufficient to neutralize about 100% of the carboxylic acid;

d) at least one softening monomer, selected from alkyl acrylate, and alkyl methacrylate; and

e) a metal stearate.

25 3. A golf ball according to claim 2, wherein the ethylenically unsaturated carboxylic acid is an acrylic or methacrylic acid in an amount no more than about 10% by weight.

30 4. A golf ball according to claim 2 wherein the metal cation is selected from the group consisting of lithium, sodium, potassium, magnesium, calcium, barium, or zinc, or a combination of such cations.

5. A golf ball according to claim 2 wherein the metal cation is a magnesium cation.

6. A golf ball according to claim 1 wherein the metal stearate is a magnesium stearate.

7. A golf ball according to claim 1 wherein the filler material is barium sulfate.

8. A golf ball according to claim 1, wherein the core has a diameter of about 1.54", a weight of about 36 grams and a PGA compression of no more than about 90.

9. A golf ball according to claim 1, wherein the cover is no more than about .07" thick.

10. A golf ball according to claim 1, wherein the ball has an overall diameter of about 1.68" and a weight of about 45.5 grams.

11. A golf ball according to claim 1 wherein the ionomer resin has a melt flow index of about .65 g/10 min.

12. A golf ball comprising:

a core having a PGA compression no greater than about 90, comprising at least one high cis content polybutadiene; zinc oxide; zinc stearate; zinc dyacrylate; an organic peroxide, and a filler material; and,

a cover comprising a blend of:

i) a single ionomeric resin terpolymer comprising ethylene, an acrylic or methacrylic acid, an alkyl acrylate, the acrylic or methacrylic acid;

ii) one or more alkalai metal, transition metal or alkaline earth metal cation in amount sufficient

to neutralized 100% of the acrylic or methacrylic acid; and

iii) at least one metal stearate;

wherein the golf ball has a PGA compression of about 85; a
5 coefficient of restitution greater than about .700; a Shore D hardness no greater than about 55; and a spin rate of at least 2700 RPM when struck with an 10° loft driver with a swing speed of about 90 mph.

10 13. A golf ball according to claim 12 wherein the ball, when struck with a standard 9-iron, has a spin rate of at least 7500 rpm.

14. A golf ball according to claim 12 wherein the ball, when
15 struck with a standard 5-iron, a spin rate of at least 4600 rpm.

15. A golf ball comprising:

a core having a PGA compression no greater than about 90,
20 comprising at least one high cis content polybutadiene; zinc oxide; zinc stearate; zinc diacrylate; an organic peroxide, and a filler material; and,

a cover comprising a blend of:

i) an ionomeric resin terpolymer comprising
25 ethylene, an acrylic or methacrylic acid, an alkyl acrylate, the acrylic or methacrylic acid;

ii) one or more alkali metal, transition metal or alkaline earth metal cation in amount sufficient to neutralized 100% of the acrylic or methacrylic
30 acid; and

iii) at least one metal stearate;

wherein the core and the cover materials are selected so that the golf ball has the following spin rate characteristics:

- i) a spin rate of at least 7500 rpm when struck with a standard 9-iron
- ii) a spin rate of at least 4600 rpm when struck with a standard 5 iron; and
- 5 iii) a spin rate of at least 2700 rpm when struck with a 10° loft driver with a swing speed of about 90 mph.